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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,275	07/05/2006	Nancy F. Dean	H0005430.75230 USA -4018	2425
92724	7590	06/11/2010	EXAMINER	
HONEYWELL/FAEGRE Patent Services 101 Columbia Road P.O. Box 2245 Morristown, NJ 07962-2245			CHERVINSKY, BORIS LEO	
			ART UNIT	PAPER NUMBER
			2835	
			NOTIFICATION DATE	DELIVERY MODE
			06/11/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentservices-us@honeywell.com  
DL-SM-IP@Honeywell.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,275	<b>Applicant(s)</b> DEAN ET AL.	
	<b>Examiner</b> Boris L. Chervinsky	<b>Art Unit</b> 2835	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 May 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCormick et al. in view of Edwards et al.

McCormick discloses a heat spreader comprising a base portion 112 having a heat spreading surface comprised of a heat receiving region made of nickel plated copper (metallic coating of claim 3) or copper alloy (col. 2, lines 65-67); a frame portion 110 made of copper or copper alloy (col. 2, lines 39-40) interfacing perimeter portion of the heat spreader and having opening traversing the thickness of the frame portion; the frame portion is in direct contact with the base portion (claim 10); the thermal conductivity greater than 300 W/mk or 400 W/mk is also disclosed (col. 2, lines 59-61); the circuit board 106, the flip chip 100 are also shown. McCormick discloses the claimed invention except different materials for the base portion and the frame portion. Edwards discloses different materials for the base portion 20 and the frame portion 23 (col. 5, lines 28-34, col. 6, lines 22-25), therefore it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use different materials for the heat spreader and the frame as disclosed by Edwards et al. in the device disclosed by McCormick.

Art Unit: 2835

With respect to claims 8 and 9, McCormick discloses the claimed invention but does not specifically indicate that thermal expansion is less than 6 ppm/k but it would be obvious to one having ordinary skill in the art at the time the invention was made to have the thermal expansion limited to claimed number to avoid stress in joined materials.

With respect to claim 11, McCormick discloses the claimed invention except diffusion bonding. The diffusion bonding is known method of joining of two different parts and as method step in the article claim does not render novelty as soon as the structure is disclosed. The method steps of claims 15-19 and 25, 27 are necessitated by the device structure as disclosed by McCormick et al. in view of Edwards et al.

With respect to claims 4, 5, 23, 26 and 28 McCormick discloses the claimed invention except interface materials such as solder or adhesive disposed between the frame and the base portion and between the base portion and the heat generating device and method of making using these materials. Edwards discloses such materials 41, 45, 28 connecting the frame and the base portion and the base portion and the heat-generating device, therefore it would be obvious to one having ordinary skill in the art at the time the invention was made to use materials and method as disclosed by Edwards et al. in the device disclosed by McCormick et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris L. Chervinsky whose telephone number is 571-272-2039. The examiner can normally be reached on 7-5:30.

Art Unit: 2835

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayprakash N. Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Boris L. Chervinsky/  
Primary Examiner, Art Unit 2835